# Economics of Cow-Calf Production in Alberta

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By

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September 1988

## ACKNOWLEDGEMENT

We wish to thank those cow-calf producers who participated in this three year-study. Without their cooperation and commitment this undertaking could not succeed. We also wish to thank Mike McEvoy for his contribution. Mike worked a year on the study commencing in the spring of 1985. He developed the computer software for analyzing the data, and had significant input to the questionnaire review and design for the second survey year. The field surveyors should also be commended for a job well done. Finally, we thank the secretarial staff for attending to the correspondence and individual and group reports sent to participants, and typing "numerous" drafts of this report.

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## FOREWORD

Cow-calf production is the backbone of the cattle industry. It is also an important element in diversifying the agricultural economy. The research project examined a three year period within the cattle cycle. The results of the survey combined with what we know of the industry clearly illustrates a viable industry.

The cow-calf study is part of the ongoing research effort of Alberta Agriculture to help individual producers improve their farm business. The farmers who participated in the survey have already received their individual research results and group averages. Research results are used in extension education and counselling as well as in formulating farm policy and program development. Federal-provincial tripartite committees are making extensive use of the branch research results to establish and evaluate the many tripartite stabilization models.

This research report is available on request. Should you have any questions or comments do not hesitate to contact the authors. A report on the economics of management is being prepared.

Les Lyster, Director
Economic Services Division

# ECONOMICS OF COW-CALF PRODUCTION IN ALBERTA

by Carlyle Ross, Dale Kaliel and Darren Chase[1]

## 1.0 Background

Cow-calf production is the backbone of the beef industry in Alberta. Despite the cyclical nature of the cattle business and a prevailing view that cow-calf production is an economically losing venture, many Alberta farmers persist in raising and/or feeding cattle in the province. But, cow-calf production is a long term investment, and if these producers are to remain in business, then over time, the cow-calf enterprise must return enough revenue to cover the accumulated costs of production. Persistent negative returns will eventually force the operator out of business.

As cow-calf producers are typically recognized as price-takers, the operator has no control over calf and fed cattle prices. Therefore, success in this business very much depends on the underlying cost of production. Production cost varies from farm to farm and region to region, depending on such factors as the availability of grazing, the extent of homegrown versus purchased feed, indebtedness and access to credit, and distance to markets.

The return to equity and investment which each producer is prepared to accept to stay in business also varies from farm to farm. All in all, the very fact that the cow-calf sector continues to thrive against all odds suggests that, at least over time, the returns are positive.

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1 Carlyle Ross, Head, Production Economics Branch of Alberta Agriculture and Supervisor of Livestock Economics; Dale Kaliel, Livestock Economist; and Darren Chase, Research Assistant.

The Production Economics Branch of Alberta Agriculture is responsible for providing the department, its field staff, and farmers with current cost/return information for most of the agricultural crops and livestock grown in the province. Over the past six years, a significant data base has been established for hogs, sheep and poultry. The annual dairy cost study is ongoing, together with economic research into field and specialty crops.

Since 1983, a number of requests were received for cow-calf studies. Producers and field staff were very much interested in receiving accurate costs/returns information on cow-calf production. Consequently, a three year study was initiated in the fall of 1984 to determine provincially, the economic and financial health of the cow-calf sector in Alberta.

## 2.0 Objectives

The main objectives of the study were to determine the economics and profitability of cow-calf production in Alberta. Specifically, the study intended to establish:

1. the level of investment associated with cow-calf production in Alberta;
2. the different inputs used, and the quantities required to produce a calf (yearling); and
3. the costs/returns, profitability and relative productivity of the beef herd.

Each study participant was to be provided with a personal detailed business analysis of his cow-calf operation plus relevant group average reports. The goal here was to enable each participant to compare his farm performance with others of the same size, management system, and location. Provision was also to be made for comparisons with the top

producers in the study. By making such comparisons, it was hoped that producers in the province would be encouraged to improve the productivity as well as the economic efficiency of their cow-calf business.

## 3.0 Outline of Report

This report will proceed by first describing in Section 4.0 the survey method and the distribution of study participants. Section 5.0 contains a brief historical review of cattle production in Alberta and notes its importance to the agricultural economy. Against this background of information the survey results are presented commencing in Section 6.0 with reports on some selected characteristics for survey farms. Estimated returns and costs are presented in Section 7.0 followed by concluding comments in Section 8.0.

## 4.0 Description of Survey

Study participants were randomly selected from a list of cow-calf producers who participated in the 1981 Beef and Sheep Support Program. A stratified random sampling procedure was used to permit size and regional groupings. Only farms with 10 or more cows were considered. The three production years under review were 1984, 1985 and 1986.

Roughly 260 producers were selected in the sample. These producers were contacted by telephone in the late fall of 1984 to explain the purpose and benefits of the study, and to ask for their cooperation.

Using a very detailed questionnaire, each participant was interviewed on his farm in the winter/spring of 1985. The individual records were analyzed and the results were mailed to each participant to check for errors, omissions, etc. When all of the individual results were validated, the group averages were finalized. Two hundred thirty-nine complete questionnaires were used in the group averages.

The above survey process was repeated in the winter/spring of 1986, when 211 producers were interviewed to obtain information for the 1985 production year. Similarly, in 1987, 215 farm interviews were undertaken to obtain 1986 production data. The results which follow are based on 199 fully completed questionnaires for the 1986 production year, with appropriate references to the previous two years. The sample distribution by region and size of operation are presented in Tables 1 and 2, and Figure 1.

TABLE 1: DISTRIBUTION OF COW-CALF STUDY PARTICIPANTS BY STUDY AREAS, 1986

| Study Areas | Census Division | No. of Records | Per Cent |
|---|---|---|---|
| South | 1,2,3,5,6,15 | 84 | 39.1 |
| East Central | 4,7,10 | 54 | 25.1 |
| West Central | 8,9,11 | 34 | 15.8 |
| North | 12,13,14,16,17,18,19 | 43 | 20.0 |
| ALBERTA | | 215 | 100.0 |

TABLE 2: DISTRIBUTION OF STUDY PARTICIPANTS BY SIZE CLASS, 1986

| Size Class | Cows Wintered | No. of Records | Per Cent |
|---|---|---|---|
| 1 | 10 - 55 | 65 | 30.2 |
| 2 | 56 - 110 | 35 | 16.3 |
| 3 | 111 - 220 | 49 | 22.8 |
| 4 | 221 - 330 | 33 | 15.3 |
| 5 | Over 330 | 33 | 15.3 |
| ALBERTA | | 215 | 100.0 |

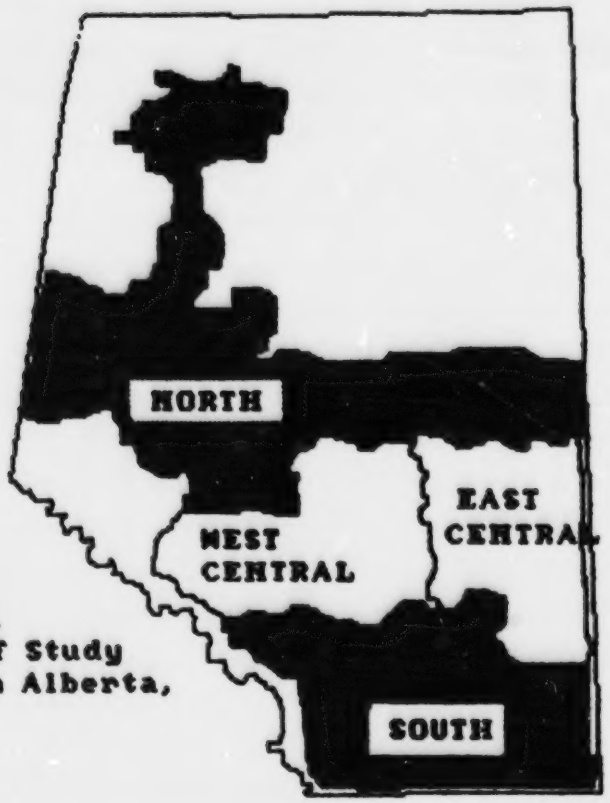


**Figure 1**
**Cow-Calf Study Areas in Alberta, 1986**

## 5.0 Cow-Calf Production in Alberta and Canada

Before presenting the results of the survey, it would be useful to place cattle production in an historical perspective and to note its importance to the Alberta economy.

This section briefly reviews cattle production in Alberta, particularly in light of a Canadian perspective and the regional distribution within the province. It also presents estimates of the value of the cow-calf sector to the agricultural economy.

From 1956 to 1986 the number of census farms in Canada which have cattle dropped by two-thirds, from 452,487 to 155,945. The reduction in Alberta farms was also substantial, dropping by almost 50 per cent from 63,432 to 33,498 in the same time period. However, because the provincial rate of disappearance was lower than the national average, Alberta presently holds 21.5 per cent of the farms which raise cattle compared to 14 per cent in 1956.

While the number of farms has been declining every year, the same cannot be said about the cattle population. Since 1956 when the July 1 farm census indicated that there were 2.45 million cattle (and calves) on Alberta farms, the Alberta cattle population steadily increased, peaking at 4.6 million in 1976, thereafter dropping by 20.6 per cent to 3.8 million head during the kill-off of the last decade. With the steady increase in Alberta's cattle population, Alberta's share of the national cattle population almost doubled from 16.4 per cent in 1956 to 31.9 per cent in 1986. The average number of head reported on Alberta farms increased three-fold from 39 to 114 per farm during the same time period.

As with the total cattle population, Alberta's beef cow herd peaked in 1976 at 1.6 million head, then dropped by 16.9 per cent to 1.3 million head in 1986. At the same time, Alberta's share of the Canadian beef cow herd steadily increased from 14.5 per cent in 1956 to 40.8 per cent in 1986. Unlike the beef cow herd, however, Alberta's share of the national dairy cow herd remained fairly stable at around nine per cent.

From a western Canada perspective, Alberta accounts for about 50 per cent of the total cattle and beef cows, and 39 per cent of the dairy cow herd. In 1956 Alberta had 31 per cent of the beef cows, 33 per cent of dairy cows, and 37 per cent of the total cattle on farms in western Canada.

Within Alberta, cattle are concentrated on farms in Census Divisions (C.D.s), 13 (9.8%), 10 (9.5%), 7 (9.2%), and 6 (8.9%). Thirty-six per cent of the cattle population is found on farms in

southern Alberta, 24 per cent in east central Alberta, and 20 per cent each in west central and northern Alberta (Figure 2). Similarly, 33 per cent of the beef cows are found in the south, 26 per cent in east central Alberta, 22 per cent in the north, and 19 per cent in west central Alberta (Figure 3). More than one-half (53%) of the dairy herd is located in central Alberta, particularly in C.D. 10 (22.5%).

Over the years, as cattle numbers increased on farms in Alberta, there has been a noticeable shift in beef cow numbers and the distribution of the beef cow herd from farms in southern Alberta to farms in the central and northern Census Divisions. Between 1956 and 1986, cow numbers increased by 455 per cent in northern Alberta, 336 per cent in west central Alberta, 81 per cent in east central Alberta, and 64 per cent in southern Alberta. Southern Alberta now maintains one-third of the provincial beef cow herd, down from its share of 48 per cent in 1956. In contrast, northern Alberta has increased its share of the beef herd from 10 per cent in 1956 to more than 22 per cent in 1986. Central Alberta's share of the beef cow herd increased marginally from 42 to 45 per cent over the same period.

The growth of beef cow numbers in central and northern Alberta is not unexpected. Increasingly marginal lands, high precipitation in these areas and a shorter growing season favor forage production and grazing for livestock. The heavy rains affect seeding and harvesting, and, with the reduced growing season, the quality of the grain is affected. Therefore, as crop production moves from south to north, cereal crops for export are gradually replaced by feed grains, grass and forages. Conceivably, the trend in cow herd numbers is likely to continue, with northern Alberta playing an increasingly important role in producing feeder cattle for the feeding industry in southern and central Alberta.

The significance of these physical statistics are further reinforced by the estimates of the value of the beef cattle marketings in Alberta. As noted in Table 3, the value of marketings of beef cattle and calves in

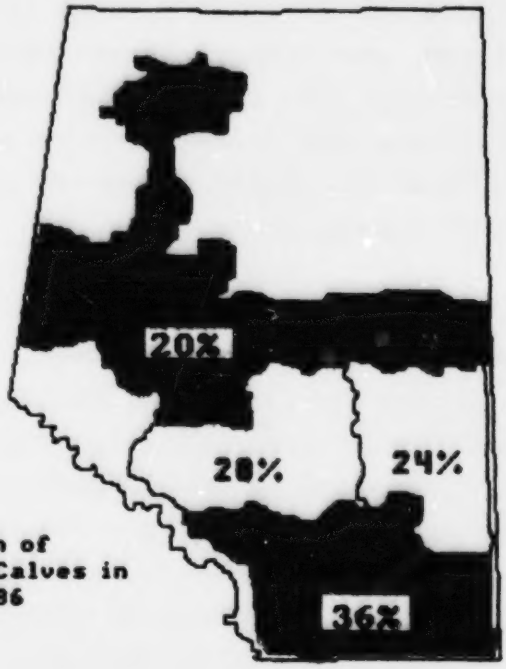


**Figure 2**
**Distribution of Cattle and Calves in Alberta, 1986**

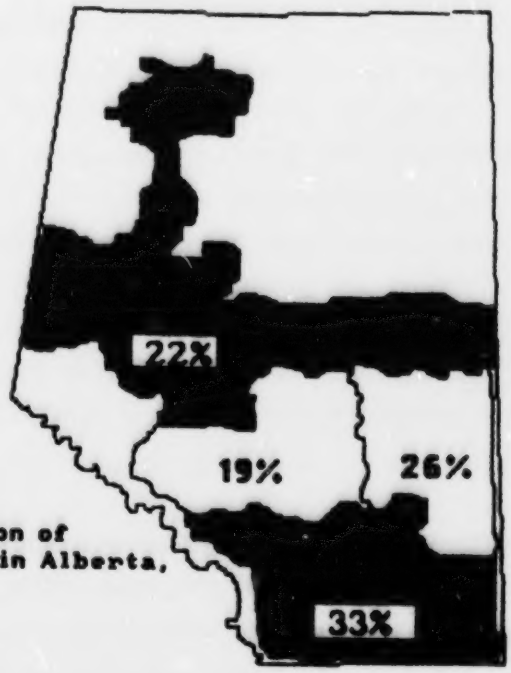


**Figure 3**
**Distribution of Beef Cows in Alberta, 1986**

the province during 1986 was roughly $1.1 billion. These marketings comprised 53.9 per cent of western Canada and 31.0 per cent of the total national marketings for that year.

TABLE 3: VALUE OF BEEF CATTLE AND CALVES MARKETED, 1986

| | $'000 's | In Percent |
|---|---|---|
| Alberta | 1,105,843 | 100.0 |
| Western Canada | 2,050,373 | 53.9 |
| Canada | 3,564,389 | 31.0 |

Source: Statistics Canada.

## 6.0 Some Characteristics of Survey Farms

### 6.1 Operator Age and Proprietorship:

The typical participant on the study was 49 years of age, with 28 years of farming and cow-calf experience. Fifty-eight per cent of the farms were single proprietorships, 25 per cent partnerships, and 17 per cent incorporated.

### 6.2 Management Systems:

Cow-calf farms in Alberta are by no means homogeneous. Five distinct production systems were identified, based on the sale dates, breed and sale weights of market cattle. There were the "pure" cow-calf, cow-feeder (yearlings and shortkeeps off grass), cow-finish, a mixture of the three systems listed, and purebred operations (Table 4). Nonetheless, all of the participants viewed themselves as cow-calf producers, with the marketing decision being primarily dependent on the availability and price of feed, and the price expectations of cattle sold at heavier weights, eg. calves vs. feeders vs. fat cattle.

The pure cow-calf operations sold most or all of their weaned calves in the fall. Forty-one per cent of the sample was categorized as "pure" cow-calf, 28 per cent as cow-feeder, 12 per cent as cow-finish, 14 per cent as mixed, and five per cent purebred.

TABLE 4: DISTRIBUTION OF STUDY PARTICIPANTS BY MANAGEMENT SYSTEM, 1987

| Management System | Number of Records | Per Cent |
|---|---|---|
| Cow-Calf | 89 | 41.4 |
| Cow-Feeder | 60 | 27.9 |
| Cow-Finish | 25 | 11.6 |
| Mixed | 30 | 14.0 |
| Purebred | 11 | 5.1 |
| ALBERTA | 215 | 100 |

6.3 The Breeding Herd:

Study participants reported wintering on average, 176 cows and 26 bred heifers per farm in 1986. Roughly nine bulls were offered for service giving a ratio of one bull for every 24 cows and heifers. The average age of the bulls was about four years. Bulls were selected primarily from exotic (48%) and British breeds (45%). Sixty-four per cent of all farms maintained a herd record keeping system.

Ten per cent of the cow herd was culled in 1985/86, down three per cent from 1984/85. The culling rate was defined as the number of cows and bred heifers sold over cows and heifers exposed. The primary reasons for culling included age of cow (32%), open at weaning (21%), failure to calve in spring (9%), structural soundness (8%), mastitis, bad udder and teats (7%), failure to sustain calf to weaning (6%), late calvers (5%) and low weaning weight of calf (4%).

6.4 Breeding Period:

The breeding period, defined as the length of time that the cows and heifers were exposed to the bulls, averaged 107 days for cows and 82 days for heifers. Heifers were typically exposed to bulls ahead of the cows and were bred at about 761 pounds. Ten per cent of the farms reported the use of artificial insemination. Heat synchronization was reported by two per cent of the farms surveyed.

6.5 Breeding Performance:

Only 40 per cent of the cow-calf producers on the study pregnancy tested their cattle. Because open cattle are usually sold in the fall, the number of cows wintered was chosen as a proxy for successful breeding performance. By this measure, the 1986 herd conception rate was established as 95.2 per cent, roughly the same as was observed in 1985. Cows tended to have a higher conception rate (95.5%) than was observed for heifers (92.5%).

6.6 The Calf Crop:

Calving was extended over a period of almost 14 weeks, with 78 per cent of the calvings occurring within 42 days, and 92 per cent within 63 days. The calving rate, defined as live births over cows/heifers wintered was 90.9 per cent, the same as the previous year, i.e. live calves born in spring of 1985.

Roughly twenty-two per cent of the heifers required some calving assistance in contrast to four per cent for the cows. The assistance to the heifers varied from moderate intervention (15%) to hard pulls (8%).

Of the calves born alive, 97 per cent were weaned in the fall. Most 1986 calves were weaned during the last two weeks of November. At weaning, heifer calves had an estimated average weight of 472 pounds and steer calves 516 pounds. On average 437 pounds live weight were weaned for each cow wintered. The 200-day adjusted weaning weight was 463 pounds.

The calf-crop of 84.1 per cent was up marginally (1.2%) above 1985. Several factors were noted which affected the 1986 crop. These factors included deaths at birth (4%), failure of some cows/heifers to calve (5%), pasture losses (2%), and sale/purchase of bred cattle (5%).

Almost four per cent of the calves died at birth or within 24 hours of birth. The main underlying causes of death were stillbirths (35%), injury at birth and malpresentation (27%), mothering (26%), unknown causes (8%) and physical abnormalities (4%). Pasture losses of 2.4 per cent were mainly the result of poor weather conditions (33%), scours (24%), pneumonia (14%) and other diseases/accidents/predators (12%).

### 6.7 Farm Size and Pasture Management

The size of most cow-calf farms very much depends on the acreage available for grazing. Study farms reported an estimated 3,632 acres of pasture per farm which provided 200 days of grazing in 1986. Stocking rates were estimated at 13.2 acres per animal unit.

Although 70 per cent of the pasture land was rented, rented land contributed only 52% of pasture utilization. On the other hand, whereas only 13 per cent of the pasture was reported as improved, tame pasture provided 30 per cent of the total grazing. One-third of the farms on the study reported applying fertilizer to pastures.

Total farm acreage was divided into approximately seven pastures per farm. Forty-two per cent of the farms practised rotational grazing. A quarter of the farms practising rotational grazing generally moved the cattle within a two week period. The remainder rested their pasture after two to four weeks of grazing.

### 6.8 Assets and Indebtedness

The assets associated with cow-calf operations in 1986 were valued at $1,055,394 per farm. Current assets comprised approximately 13 per cent of total cow-calf assets. Intermediate or working assets comprised 25 per cent, and long-term assets 62 per cent. Current assets were mainly accounts receivable, feed on hand, supplies and cash securities. Intermediate assets consisted of breeding stock, machinery, and equipment, whereas long-term assets were deemed to be land, buildings and improvements.

Land and buildings comprised 62 per cent of total cow-calf assets, breeding stock 17 per cent, and market cattle eight per cent. Investment per cow was estimated at $5,239.

Indebtedness for the cow-calf component of farms averaged $130,322, yielding a net capital ratio of $8.09 in total assets per dollar of total debt. Alternatively, only 12 per cent of the cow-calf assets were not owned. The current ratio which measures the degree of liquidity and immediate solvency of the cow-calf enterprises was 3.93. In other words, there was just under four dollars of very liquid assets for every dollar of current debt. Further financial ratios for the cow-calf enterprise, plus the total farm are presented in Table 5. When the entire farm is considered, the cow-calf enterprise accounted for 68 percent of the total farm assets and 58 percent of the total farm debt.

TABLE 5: ESTIMATED FINANCIAL RATIOS FOR COW-CALF FARMS IN ALBERTA, 1986

| Ratio | Cow-Calf Enterprise | Total Farm |
|---|---|---|
| Current Assets / Current Liabilities | 3.93 | 2.57 |
| Current & Intermediate Assets / Current & Intermediate Liabilities | 8.60 | 6.07 |
| Long Term Assets / Long Term Liabilities | 7.82 | 7.51 |
| Total Assets / Total Liabilities | 8.09 | 6.95 |
| Total Liabilities / Owner Equity | 0.14 | 0.17 |

## 7.0 Revenues and Expenses

Previous sections have dealt with the survey purpose and design, an overview of the beef cow-calf industry in Alberta and Canada, and highlights of some of the characteristics of cow-calf operations in the province. These elements set the stage for a review of the findings of the dollars and cents of cow-calf production in Alberta.

### 7.1 Provincial Viewpoint: 1984 - 1986

A variety of supporting financial and physical estimates are provided in Table 6. Of particular note, over the three year period covered by the provincial cow-calf survey, cattle receipts declined from roughly $683.00 to $566.00 per cow wintered.[1] Despite this decline, however, net income was greatly increased due to declining production costs and substantially increased compensation payments, support payments and the value of livestock inventory.

The contribution margin or return over variable cost significantly improved from losses of $61.08 per cow in 1984, to positive returns of $15.67 and $211.84 per cow in 1985 and 1986, respectively. Similarly, net income greatly improved from losses of $202.96 and $75.13 per cow wintered in 1984 and 1985 respectively, to positive earnings of $91.19 per cow wintered during 1986. The margin of cash cattle receipts over cash costs, however, remained firmly positive with 1984, 1985 and 1986 averages of $194.44, $187.45 and $164.72 per cow wintered, respectively[2]. In combination, these estimates demonstrate the capacity of cow-calf enterprises to weather severe net income losses, while at the same time meeting their current cash commitments.

---

1 Winter: 1984: 1983/84; 1985: 1984/85; and 1986: 1985/86.

2 The estimates of returns and costs are presented in detail in Table 10 at the end of this report.

TABLE 6: ESTIMATED RETURNS AND COSTS FOR COW-CALF FARMS IN ALBERTA, 1984-1986

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| No. of Cows Wintered | 218.6 | 210.9 | 201.3 |
| Production Stock Sold | | per cent | |
| Weaned Calves | 38.2 | 37.0 | 39.1 |
| Backgrounders | 45.9 | 35.5 | 40.3 |
| Slaughter Cattle | 15.9 | 27.5 | 20.6 |
| | 100.0 | 100.0 | 100.0 |
| | | $ per cow | |
| Cattle Receipts | 682.99 | 575.54 | 565.55 |
| Gross Income | 576.66 | 591.61 | 768.63 |
| Feed Costs | 250.03 | 276.26 | 225.55 |
| Total Costs | 639.09 | 594.54 | 580.00 |
| Return Over Variable Costs | (61.08) | 15.67 | 211.84 |
| Net Income | (202.96) | (75.13) | 91.19 |
| Cattle Receipts - Cash Costs | 194.44 | 187.45 | 164.72 |
| Investment | 5,500.56 | 5,496.30 | 5,239.32 |

7.2 Cross-Sectional Viewpoint: 1986

Further explanation of the nature of cow-calf operations is offered by a cross-sectional review. Aggregations were prepared to highlight aspects of cow-calf production by management system, by region and by size of operation.

As noted in Section 6.2, five distinct cow-calf management systems were observed in Alberta. A summary of the returns and costs for three selected systems is presented in Table 7. Cattle receipts per cow wintered averaged $438.65 for weaned-calf operations, $533.12 for the feeder/backgrounder, and $862.50 for those cow-calf operations which finished the bulk of their production stock to slaughter weight. Feed

TABLE 7: ESTIMATED RETURNS AND COSTS FOR COW-CALF FARMS BY MANAGEMENT SYSTEM, ALBERTA, 1986

| | Weaned Calf | Feeder | Finishing |
|---|---|---|---|
| No. of Cows Wintered | 181.1 | 204.0 | 253.2 |
| Production Stock Sold | - - - - - - - per cent - - - - - - - | | |
| Weaned Calves | 94.8 | 2.1 | 0.0 |
| Backgrounders | 4.7 | 96.4 | 18.4 |
| Slaughter Cattle | 0.5 | 1.5 | 81.6 |
| | 100.0 | 100.0 | 100.0 |
| | - - - - - - - $ per cow - - - - - - - | | |
| Cattle Receipts | 438.65 | 533.12 | 862.50 |
| Gross Income | 638.36 | 785.94 | 1,087.56 |
| Feed Costs | 166.72 | 217.20 | 387.65 |
| Total Costs | 491.28 | 585.31 | 768.83 |
| Return Over Variable Costs | 195.65 | 207.23 | 252.50 |
| Net Income | 70.85 | 86.55 | 141.20 |
| Cattle Receipts - Cash Costs | 95.18 | 124.52 | 284.59 |
| Investment | 5,219.79 | 5,589.43 | 4,894.64 |

costs were $166.72, $217.20 and $387.65 per cow wintered for the same respective systems. Despite the higher costs during this part of the cattle cycle, each extra pound gained toward slaughter weight increased net income. It should also be noted that size of the breeding herd significantly increased as production changed from weaned calves to feeder/backgrounder to slaughter cattle.

Returns and costs would be expected to vary from region to region according to factors such as natural resources at hand and marketing alternatives available. These expectations are, in part, borne out by the regional figures presented in Table 8. Feed costs ranged from $182.47 per cow wintered in the south to $282.29 per cow wintered in the west central region. Net income per cow was highest in central Alberta at about $100, and lowest in northern Alberta at $41. Substantial differences in average herd sizes were also observed, with the smallest herds being found in the north.

It is recalled in Table 7 that the management system was related to farm size which in turn was also directly related to profitability (net income per cow). The estimates in Table 9 show that the average investment per cow declined with increasing size of the cow-calf enterprise. These findings tend to offer further evidence of interrelations among size, management system and profitability. On average, larger farms appeared to background and finish a greater proportion of the calf crop than smaller farms. Moreover, net income steadily increased with the size of operation from a net loss of $85.91 per cow wintered on the smallest farms to a net gain of $154.12 on the largest farms.

TABLE 8: ESTIMATED RETURNS AND COSTS FOR COW-CALF FARMS BY STUDY AREAS, ALBERTA, 1986

| | South | East Central | West Central | North |
|---|---|---|---|---|
| Cows Wintered | 226.6 | 275.0 | 138.9 | 113.2 |
| Production Stock Sold | | | per cent | |
| Weaned Calves | 56.0 | 20.7 | 36.5 | 41.9 |
| Backgrounders | 36.6 | 44.1 | 34.9 | 47.0 |
| Slaughter Cattle | 7.4 | 35.2 | 28.6 | 11.1 |
| | 100.0 | 100.0 | 100.0 | 100.0 |
| | | | $ per cow | |
| Cattle Receipts | 479.00 | 653.79 | 630.22 | 562.94 |
| Gross Income | 712.70 | 849.16 | 811.32 | 698.73 |
| Feed Costs | 182.47 | 258.36 | 282.29 | 240.79 |
| Total Costs | 521.88 | 639.21 | 603.50 | 600.63 |
| Return Over Variable Costs | 211.80 | 226.03 | 217.21 | 143.51 |
| Net Income | 90.91 | 99.96 | 102.59 | 41.32 |
| Cattle Receipts - Cash Costs | 90.10 | 195.43 | 249.22 | 259.98 |
| Investment | 6,376.23 | 4,672.33 | 4,070.86 | 3,729.84 |

TABLE 9: ESTIMATED RETURNS AND COSTS FOR COW-CALF FARMS BY SIZE CLASSES, ALBERTA, 1986

| | 10 - 55 | 56 - 110 | 111 - 220 | 221 - 330 | More Than 330 |
|---|---|---|---|---|---|
| Cows Wintered | 34.0 | 82.1 | 161.2 | 270.5 | 583.1 |
| Production Stock Sold | - - - - - - - - - - - - - - - - per cent - - - - - - - - - - - - - - - - | | | | |
| Weaned Calves | 47.0 | 58.8 | 47.1 | 44.5 | 30.4 |
| Backgrounders | 45.3 | 32.9 | 37.3 | 33.3 | 45.3 |
| Slaughter Cattle | 7.7 | 14.3 | 15.6 | 22.2 | 24.3 |
| | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| | - - - - - - - - - - - - - - - - $ per cow - - - - - - - - - - - - - - - - | | | | |
| Cattle Receipts | 553.46 | 495.23 | 559.20 | 564.38 | 580.74 |
| Gross Income | 759.74 | 705.40 | 773.29 | 706.90 | 806.78 |
| Feed Costs | 267.19 | 233.40 | 240.87 | 223.35 | 215.08 |
| Total Costs | 738.24 | 626.25 | 633.71 | 562.45 | 544.02 |
| Return Over Variable Costs | 71.41 | 109.60 | 171.94 | 186.37 | 269.56 |
| Net Income | (85.91) | (13.66) | 34.96 | 77.16 | 154.12 |
| Cattle Receipts - Cash Costs | 184.93 | 142.20 | 162.88 | 207.85 | 146.06 |
| Investment | 6,414.32 | 5,766.01 | 4,766.57 | 4,753.79 | 5,483.45 |

## 8.0 Conclusions

Cow-calf production in Alberta has played an integral role in the province's agricultural industry. However, in recent years, questions have been raised about the viability of the cow-calf business in Alberta. This study has examined production over a three year period, 1984, 1985 and 1986. While three years do not cover a cattle cycle, the study results indicate that strength and profit potential do exist in the industry. Cow-calf production also enables farmers to make use of marginal lands which otherwise are unsuitable for commercial crop production. Moreover, this enterprise provides a measure of risk reduction on mixed farms. It is therefore not surprising that Alberta farmers continue to maintain a large cow-calf business enterprise.

The provincial cow-calf survey project has been a major undertaking of the Production Economics Branch. The highlights presented in this paper are only a small sample of the significant research information being gleaned from the survey data. The Branch is continuing its study of cow-calf production in Alberta by conducting scaled-down annual surveys to monitor performance and supplement the 1984-86 data base.

# TABLE 10: ESTIMATED RETURNS AND COSTS FOR COW-CALF FARMS IN ALBERTA, 1986

| | | $ PER COW WINTERED | -- DOLLARS PER -- CWT. SOLD | $100 OF SALES | % OF GROSS INCOME |
|---|---|---|---|---|---|
| | **INCOME:** | | | | |
| | CATTLE RECEIPTS | | | | |
| | BREEDING STOCK | 101.10 | 18.97 | | 13.15 |
| | PRODUCTION STOCK | 464.45 | 87.13 | | 60.43 |
| | TOTAL CATTLE RECEIPTS | 565.55 | 106.10 | 100.00 | 73.58 |
| | COMPENSATION/SUPPORT | 76.71 | 14.39 | 13.56 | 9.98 |
| | INVENTORY CHANGE(+/-) | 126.37 | 23.71 | 22.34 | 16.44 |
| | GROSS INCOME | 768.63 | 144.19 | 135.91 | 100.00 |
| | LESS LIVESTOCK PURCHASED | -97.44 | -18.28 | -17.23 | -12.68 |
| A. | VALUE OF FARM PRODUCTION | 671.19 | 125.91 | 118.68 | 87.32 % |
| | **EXPENSES:** | | | | % OF TOTAL COST |
| | FEED COSTS -HOMEGROWN | 173.90 | 32.62 | 30.75 | 29.98 |
| | -PURCHASED | 61.79 | 11.59 | 10.93 | 10.65 |
| | LESS FEEDGRAIN ADJUSTMENT | -10.15 | -1.90 | -1.79 | -1.75 |
| | NET FEED COST | 225.55 | 42.31 | 39.88 | 38.89 |
| | VET. AND BREEDING | 12.51 | 2.35 | 2.21 | 2.16 |
| | PASTURE IMPROVEMENTS | 12.99 | 2.44 | 2.30 | 2.24 |
| | PASTURE RENTAL | 17.83 | 3.34 | 3.15 | 3.07 |
| | TRUCKING - FEED | 1.54 | 0.29 | 0.27 | 0.27 |
| | TRUCKING - CATTLE | 3.82 | 0.72 | 0.68 | 0.66 |
| | MARKETING AND COMMISSION | 5.80 | 1.09 | 1.03 | 1.00 |
| | CUSTOM WORK | 9.50 | 1.78 | 1.68 | 1.64 |
| | MAINTENANCE AND REPAIRS | 25.84 | 4.85 | 4.57 | 4.46 |
| | FUEL, OIL, AND LUBE | 18.99 | 3.56 | 3.36 | 3.27 |
| | UTILITIES | 8.81 | 1.65 | 1.56 | 1.52 |
| | SMALL TOOLS & MISCELLANEOUS | 3.65 | 0.68 | 0.64 | 0.63 |
| | ACCOUNTING/LEGAL AND OFFICE | 4.91 | 0.92 | 0.87 | 0.85 |
| | ADVERTISING | 2.35 | 0.44 | 0.42 | 0.41 |
| | STABILIZATION PREMIUMS | 1.27 | 0.24 | 0.22 | 0.22 |
| | OPERATING INTEREST PAID | 22.89 | 4.29 | 4.05 | 3.95 |
| | HIRED LABOR - FAMILY | 7.33 | 1.37 | 1.30 | 1.26 |
| | - OTHER | 22.74 | 4.27 | 4.02 | 3.92 |
| F. | UNPAID LABOR - OPERATOR | 47.90 | 8.99 | 8.47 | 8.26 |
| | - FAMILY | 3.13 | 0.59 | 0.55 | 0.54 |
| B. | TOTAL VARIABLE COSTS | 459.35 | 86.17 | 81.22 | 79.20 % |
| | BUILDING/MACHINERY INSURANCE | 6.29 | 1.18 | 1.11 | 1.08 |
| | PROPERTY TAXES | 11.79 | 2.21 | 2.09 | 2.03 |
| | INTEREST PAID - TERM LOANS | 40.73 | 7.64 | 7.20 | 7.02 |
| G. | DEPRECIATION - BUILDINGS | 12.62 | 2.37 | 2.23 | 2.18 |
| | - EQUIPMENT | 20.15 | 3.78 | 3.56 | 3.47 |
| | - MACHINERY | 29.04 | 5.45 | 5.14 | 5.01 |
| C. | TOTAL FIXED COSTS | 120.64 | 22.63 | 21.33 | 20.80 % |
| D. | TOTAL PRODUCTION COST (B+C) | 580.00 | 108.81 | 102.55 | 100.00 % |
| E. | NET INCOME (A-D) | 91.19 | 17.11 | 16.12 | |
| | RETURN OVER VARIABLE COSTS (A-B) | 211.84 | 39.74 | 37.46 | |
| | RETURN TO UNPAID LABOR & MANAGEMENT (E+F) | 142.22 | 26.68 | 25.15 | |
| | CASH RECEIPTS - CASH COSTS | 241.43 | 45.29 | 42.69 | |
| | CATTLE RECEIPTS AS A % OF TOTAL CASH RECEIPTS | 64.24 % | | | |